

APPROVAL CERTIFICATE FOR A PACKAGE DESIGN**F/357/B(U)F-96 (Ct)**
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The French Competent Authority, in response to the request letter submitted by the company TN International in the letter **CEX-08-00108115-106** of **November 14, 2008**, with respect to the Safety Analysis Report TN International DOS-06-00032593 **rev. 2** of **November 12, 2008**, hereby certifies that the package design comprising the **TN-MTR** packaging described in appendix 0 with the **index t** :

- loaded
 - or with MTR fuel elements, irradiated or not, placed in a MTR-52SV2 basket, as described in appendix 9 with the **index t**;is in compliance as a **B(U) Type package design loaded with fissile materials**;
- empty or loaded with an empty basket, contaminated or not,
is in compliance as **B(U) Type package design**,

with the requirements of the regulations, agreements and recommendations listed below :

- Regulations for the Safe Transport of Radioactive Materials from the International Atomic Energy Agency, TS-R-1, 1996 edition (modified 2003);
- European Agreement concerning the international carriage of dangerous goods by road (ADR) ;
- Regulations concerning the international carriage of dangerous goods by rail (RID) ;
- European Agreement concerning the international carriage of dangerous goods on the Rhine (ADNR).
- International Maritime Dangerous Goods Code, International Maritime Organization (IMDG Code),
- Decree of June 1, 2001, modified, concerning the carriage of dangerous goods by road (ADR decree) ;
- Decree of June 5, 2001, modified, concerning the carriage of dangerous goods by rail (RID decree) ;
- Decree of December 5, 2002 concerning the carriage of dangerous goods by inland navigation ways (ADNR decree) ;
- French decree of November 23, 1987 (amended) relating to shipping safety, division 411 of the associated regulations (RSN decree);

This certificate does not exempt the consignor from complying with the prescription established by the authorities of the countries through or into which the package will be transported.

The validity of the certificate expires on: **December 31st, 2010**

Registration number: **ASN/DIT/0163/2009**

Paris, date **March 12th, 2009**

**For the President of ASN and by delegation,
The General Head Deputy,
J-L LACHAUME**

OVERVIEW OF THE SUCCESSIVE CERTIFICATES ISSUED

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APPENDIX 0 TN-MTR PACKAGING

1. PACKAGING DEFINITION

The packaging is designed, manufactured, inspected, tested, maintained and used in compliance with TN International Safety Analysis Report DOS-06-00032593 **revision 2**.

The packaging, of a generally cylindrical form, is presented in figure 0.1.

The packaging design plans:

- TN-MTR packaging – overall design plan: 4466-14, index G,
- TN-MTR packaging – detailed design plan: 4466-18, index H,
- TN-MTR packaging – design plan – SEC cover: 4466-99, index D;

The overall external dimensions of the packaging are:

- Height: 2,008 mm,
- Outside diameter: 2,080 mm.

The cavity is a cylinder 1,080 mm high and 960 mm in diameter.

The empty mass (without basket or fuel elements) is 20 600 kg.

Its maximum gross mass under transport conditions (envelope for possible contents) is 23 400 kg.

The packaging comprises the following sub-assemblies:

1.1 Body

The body consists of lead radiological protection, surrounded by resin thermal shielding, wrapped in two stainless steel vessels. The outer surface of the packaging carries fins (to facilitate the removal of the heat given off by the contents).

1.2 Lid

The lid comprises:

- either lead radiological protection, surrounded by a stainless steel casing. This is the STANDARD type of lid. It has two orifices A and B to facilitate packaging operation (Figure 0.3);
- or 3 stainless steel parts : the lid, the plug and the ring. This is the DRY type of lid (figure 0.2). It also has two orifices A and B to facilitate packaging operation (figure 0.3);

The conditions for the use of the above lids are given in the appendices describing the contents.

1.3 Shock-absorbing systems

The shock-absorbing cover is made from wood enclosed in a stainless steel encasing.

1.4 Handling and tie-stowage devices

The packaging is fitted with two trunnions for handling and four tie-stowage lugs.

1.5 Safety functions

The main safety features and the main points important for safety are:

- **Containment** envelope consists of the body cavity, the lid, the orifice closure plates and the internal lid and closure plate gaskets;
- **Radiological protection** ensured by the packaging body's successive layers of steel and lead;
- **Criticality safety** ensured by the isolation system, which is composed of the elements described in the content appendices and the packaging, whose cover has been removed and whose resin layer has been replaced by air or by water or in the worst case scenario;
- **Thermal power dissipation** ensured by the body and the fins on the outer surface;
- **Protection against impacts** ensured by the shock-absorbing cover;
- **Protection against fire** ensured by the resin and the shock-absorbing cover.

2. MEASURES THAT THE CONSIGNOR MUST TAKE BEFORE SHIPMENT

The packaging must be used in compliance with the instructions set out in Section 6A of the Safety Analysis Report.

3. MAINTENANCE PROGRAMME

Maintenance of the packaging is described in Section 7A of the Security Guideline.

4. NOTIFICATION AND RECORDING OF SERIAL NUMBERS

The French competent authorities must be kept informed of any packaging that is taken out of service or transferred to another owner. To this end, an owner giving up a packaging must communicate the name of the new owner.

5. QUALITY ASSURANCE

The quality assurance principles to be applied in the design, manufacture, inspection, testing, maintenance and use of packages must comply with those described in Section 8A of the Safety Analysis Report.

6. ADDITIONAL REQUIREMENTS FOR CONFINED TRANSPORT

If packages are transported using confined transport means (covered vehicle, transport container, canopy, etc.) the heat dissipation is likely to change.

Transporting in confined transport vehicles is permitted subject to proving by the consignor that the maximum temperature of the internal cavity's walls remains less than or equal to 136°C, taking into account the regulatory atmospheric conditions and the content's actual power after a thermal balance has been achieved.

FIGURE 0.1
DIAGRAM OF THE TN-MTR PACKAGING

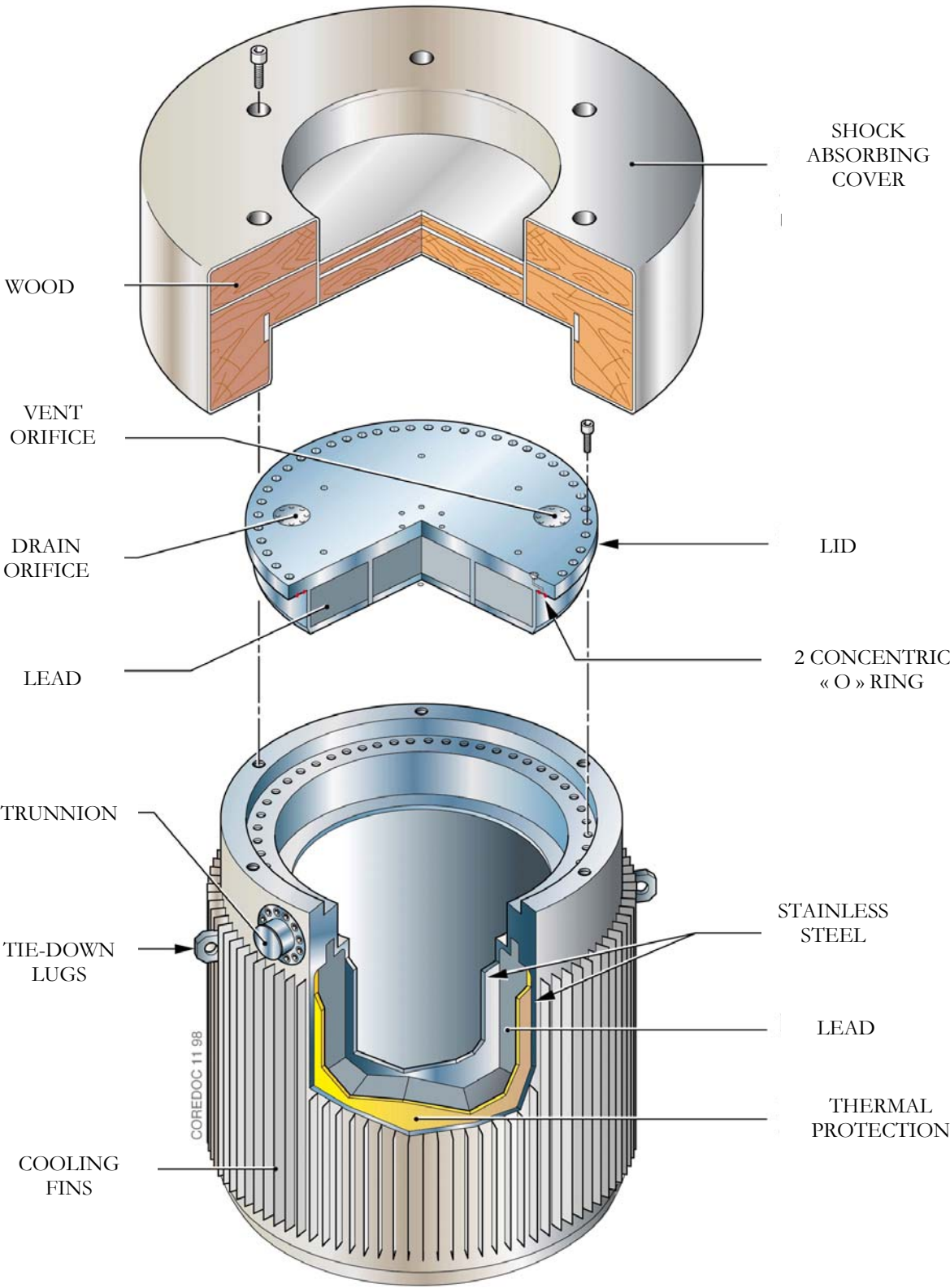


FIGURE 0.2
DIAGRAM OF THE DRY TYPE LID

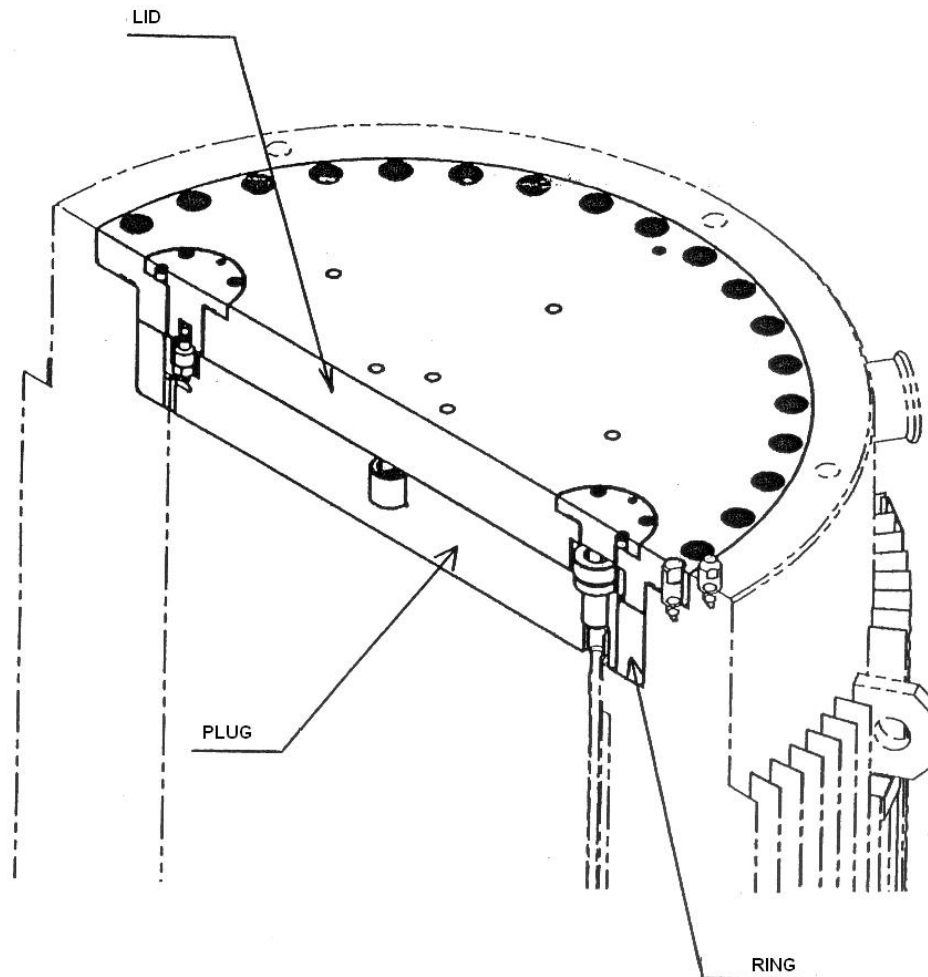
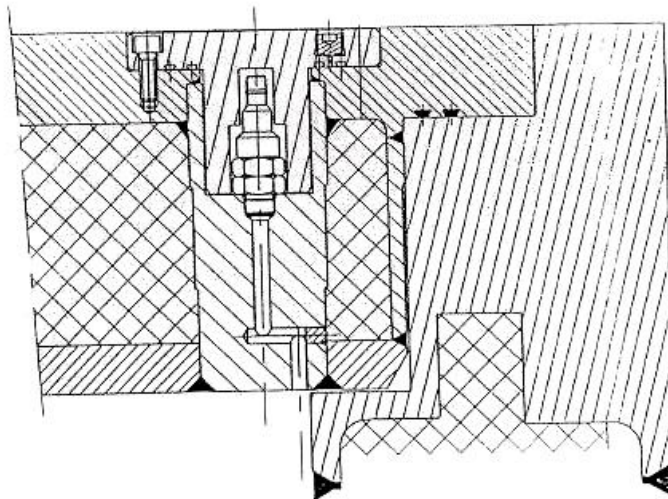


FIGURE 0.3 (1/2)

DETAILS OF ORIFICES ON PACKAGING
STANDARD TYPE LID

DETAIL OF ORIFICE A
QUICK CONNECTION COUPLING



DETAIL OF ORIFICE B

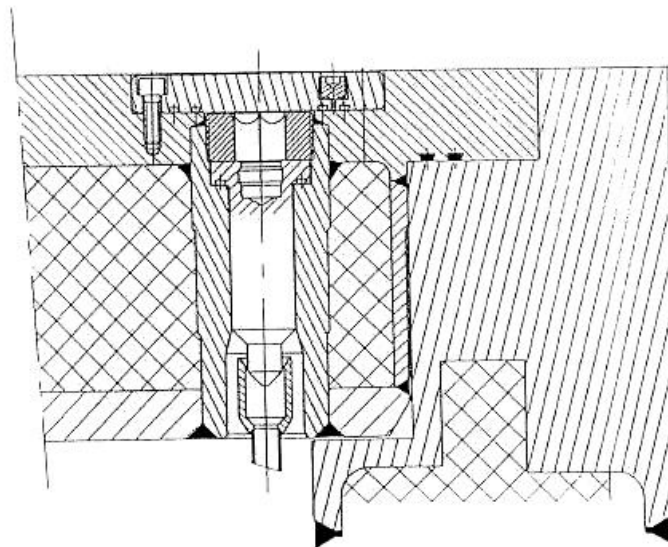
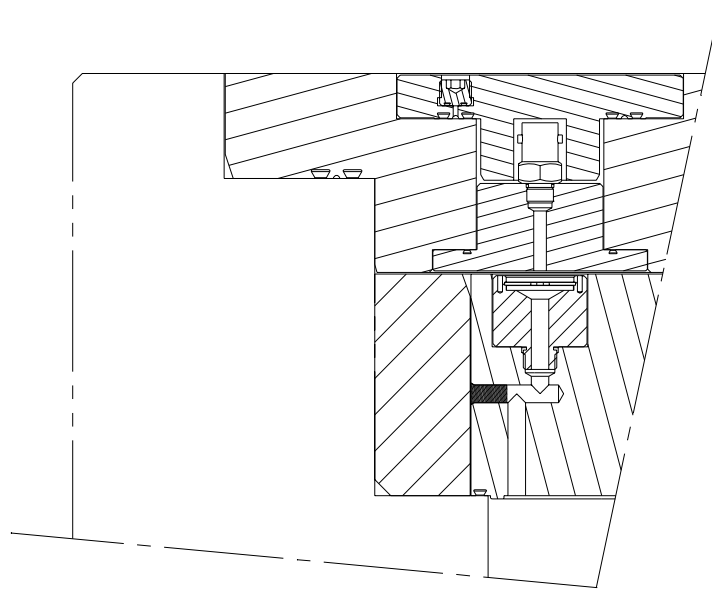


FIGURE 0.3 (2/2)

**DETAIL OF ORIFICES ON PACKAGING
DRY TYPE LID**

DETAIL OF ORIFICE A

QUICK CONNEXION



DETAIL OF ORIFICE B

